



County Administration  
101-C Mounts Bay Road  
P.O. Box 8784  
Williamsburg, VA 23187-8784  
P: 757-253-6728  
[jamescitycountyva.gov](http://jamescitycountyva.gov)

January 31, 2012

Mr. David A. Johnson, Director  
Virginia Department of Conservation and Recreation  
203 Governor Street  
Richmond, VA 23219-2010

**RE: Submittal of James City County Supporting Information for the Chesapeake Bay TMDL Phase II Watershed Implementation Plan**

Dear Mr. Johnson:

Recognizing the difficulties that the Commonwealth of Virginia has encountered with the current version of the Chesapeake Bay watershed model, James City County is pleased to provide you with specific information regarding water quality conditions in the County, including land cover and best management practice (BMP) implementation levels. Furthermore, we are providing a suite of strategies which we believe will result in measurable improvement to water quality conditions in the County overtime. With this submittal, we affirm our commitment to improving and maintaining water quality in Virginia through our support of the Chesapeake Bay TMDL (CBTMDL) planning process. Our intent is to improve the underlying technical basis for the CBTMDL as well as assure the Commonwealth of Virginia of our commitment to implementation.

***James City County's Commitment to Natural Resources Stewardship***

James City County is located in the upper Virginia Peninsula, in the coastal plain geologic province, and is the epicenter of much of Virginia's early English-speaking history. The County borders the York River to the northeast, James River to the south, and the Chickahominy River to the west. The prevalence of historic rivers and waterways in the County ensures that James City County citizens are aware and active users of these waterways.

Since James City County first adopted a comprehensive plan in 1975, the population of the County has increased over 235 percent from approximately 20,000 persons to a current population of 67,101. Based on 2010 Census data, the County was the fifth fastest growing locality in Virginia over the last ten-year period. In response to such rapid growth, citizens in James City County have been on the vanguard of environmental protection and growth management. The County's award winning comprehensive plan has long included chapters dedicated to environmental management, community character, and sustainability. During the most recent comprehensive plan update process, the notion of preserving the County's assets and resources for future generations while providing for the needs of current residents became a guiding principle. A summary of this concept became the vision and theme of *Historic Past, Sustainable Future* for the 2009 Comprehensive Plan.

Each section of the Comprehensive Plan discusses an important aspect of community life and highlights the connection between that section and the sustainability theme. Below are excerpts from the 2009 Comprehensive Plan:

***Environment:*** *Environmental sustainability is the ability to maintain the qualities that preserve life by maintaining ecological processes, functions, biodiversity, and productivity into the future. The County's goal is to continue to maintain and improve the high level of environmental quality in James City County and protect and conserve sensitive lands and waterways for future generations.*

**Community Character:** *Community Character sustainability is embedded in the establishment of Community Character Corridors and Areas and the preservation of open space, scenic, cultural, natural, and historic qualities. The County's goal is to acknowledge the responsibility to be good stewards of the land by preserving and enhancing the scenic, cultural, rural, farm, forestal, natural, and historic qualities that are essential to the County's rural and small town character, economic vitality, and overall quality of life.*

**Parks and Recreation:** *A sustainable community provides generous access to parks and safe and healthy playgrounds and recreation facilities for its residents while providing opportunities for social connectivity. The County's goal is to provide a range of recreational facilities and activities that are affordable, accessible, appropriate, and adequate in number, size, type, and location to accommodate the needs of all County residents to promote personal growth, social development, and healthy lifestyles.*

**Public Facilities:** *Sustainable practices apply to the location, design, construction, operation, maintenance, and renovation of County facilities through maximizing efficiencies, minimizing the use of non-renewable energy sources, maintaining a high degree of indoor air quality, recycling waste, conserving water, utilizing recyclable and reusable products, and applying green building practices. The County's goal is to commit to and provide a high level and quality of public facilities and services.*

These core principles have resulted in a wide range of activities promoting water quality protection, sustainability, and community character. As a result, today James City County boasts:

- A comprehensive Chesapeake Bay protection program based on a county-wide resource management area (James City County was the first Virginia locality to adopt a Chesapeake Bay Preservation Ordinance on August 6, 1990);
- A well-funded and active green space acquisition program, which has preserved 1,273 acres of land to date;
- Ordinances that actively promote conservation easements as tools to meet stormwater management requirements;
- A well-funded and active purchase of development rights program, which has protected 518 acres of land from development;
- A comprehensive watershed planning program which identifies lands needing enhanced stormwater management, targets lands for the green space program, encourages better site design, and identifies stormwater retrofit and improvement opportunities;
- The James City PRIDE (protecting resources in delicate environments) public information and outreach program;
- An active group of volunteer water quality monitors who evaluate watershed conditions quarterly and screen for elevated bacteria levels monthly; and
- A sustainable building policy to promote energy efficiency, water conservation, heightened environmental protections, and more.

In addition, James City County is a regionally recognized leader in implementing water quality programs, as evidenced by:

- The James City County Method for determining where perennality begins in a waterbody was endorsed by the Chesapeake Bay Local Assistance Board and is now used throughout Tidewater Virginia;
- The James City County 10-point BMP System for compliance with the County's Chesapeake Bay Preservation Ordinance stormwater requirements. In addition to requiring structural BMPs on all new development and redevelopment projects, stormwater credit is also given for the preservation of natural open space. This 10-point system has resulting in the preservation of over 2,400 acres of natural open space.
- The James City County Turf Love Program works with citizens to better manage fertilizers in residential neighborhoods. To date, over 800 acres have nutrient management plans. This year the County is implementing a National Fish and Wildlife Foundation Chesapeake Bay Small Watersheds Grant to pilot residential scale rain gardens through the Turf Love program;
- The James City County Capital Improvement Program has funded almost one mile of stream restoration utilizing natural stream channel design principles; and
- The fact that James City County has successfully completed two program audits by DCR for compliance with the Erosion and Sediment Control and Chesapeake Bay Preservation Programs.

Considering that James City County has accomplished all of the above in addition to successfully implementing the Municipal Separate Storm Sewer System General Permit and the Sanitary Sewer Overflow Consent Order, it is clear that the County takes its stewardship responsibilities seriously.

#### ***The WIP Development Process in James City County – Focusing on Urban and Converting Land***

James City County, along with other communities in Hampton Roads, has been tracking the development of the Chesapeake Bay TMDL and watershed implementation planning process for several years. Monthly involvement with the Hampton Roads Planning District Commission (HRPDC) programs has enabled James City County to be focused on the implications and future requirements of the CBTMDL. Furthermore, James City County has been an active participant in other TMDL efforts, to the extent that the County contracted with the HRPDC to develop a TMDL implementation plan for bacterial impairments within the County. The *Implementation Plan for Fecal Coliform TMDL for Mill Creek and Powhatan Creek*, (HRPDC, 2011) has become a blueprint for mitigation throughout the County's bacterially impaired watersheds.

With respect to developing strategies and approaches to meet the CBTMDL, James City County established a Technical Recommendation Committee in July 2011 consisting of representatives from various County departments, County Administration, James City Service Authority, Colonial Soil and Water Conservation District, Virginia Cooperative Extension, the County's Stormwater Program Advisory Committee, and the Virginia Department of Health. To assist citizens in following the development of the County's strategies, a webpage was created (<http://www.jccgov.com/generalservices/tmdl.html>) summarizing the CBTMDL effort, documenting the work of the committee and providing helpful links to regional, State, and EPA websites. The webpage also included a mechanism for citizens to provide input.

The Technical Recommendation Committee met three times, the last meeting after receipt of your November 9, 2011, letter requesting five categories of information. The Committee reviewed available County data, discussed the opportunities presented in your letter and determined that James City County should focus strategies on the range of County programs aimed at urban and converting land uses.

The remainder of this letter provides information requested by DCR and summarizes our findings with respect to James City County's intent to develop and implement a preferred BMP scenario. This information was gathered and developed by staff and has not been reviewed or endorsed by the James City County Board of Supervisors. The Board, therefore, has not committed to any specific level of future funding. Once the critical data issues described below are resolved, the County will be in a better position to evaluate future program needs with respect to the CBTMDL.

### ***Support for DCR's Approach to the WIP II Development***

James City County appreciates and fully supports DCR's interest in updating the Chesapeake Bay watershed model to include all existing BMPs and correct land use/land cover data. This information is critical to ensuring that the CBTMDL effort is credible in the eyes of citizens. We believe that accurate data will result in an improved modeling effort, benefiting all parties.

Furthermore, we appreciate the willingness of DCR to receive and use our preferred local BMP scenarios. It is heartening to know that we are collaborating as partners in this effort. As a local government, we are in the best position to understand the desires of our citizens with respect to environmental protection and improved water quality. James City County citizens have long been leaders in this area and will be so into the future. We believe we are in the best position to develop cost-effective solutions.

Finally, James City County is particularly appreciative of DCR and EPA efforts to credit reduction practices implemented outside of our MS4 regulated area toward meeting any MS4 reduction requirements. This provides us with the widest range of options for addressing the needs of the CBTMDL.

### ***James City County BMP Inventory and Implementation Progress***

After carefully reviewing the model data as contained in the Virginia Assessment and Scenario Tool (VAST), it is clear that the Bay watershed model misrepresents BMP treatment levels in James City County. As of December 28, 2011, we provided DCR with corrected data in VAST. Table 1 presents BMP data from two different Chesapeake Bay Model runs compared with data that James City County can document regarding BMP implementation.

Table 1 - Chesapeake Bay Model BMP Data Compared to James City County BMP Data

Source	Combined BMP Type	2005 Progress BMPs - Ches Bay Model	JCC Data- 2005 BMPs	2009 Progress BMPs - Ches Bay Model	Total JCC BMPs to date	BMPs not Reported in Ches Bay Model
Septic	Septic Connections (systems)	-		-		
	Septic Denitrification (systems)	-		-		
	Septic Pumpouts (systems) (Annual)	-	722	676	722	46
Construction	EandS (Acres) (Annual)	-	240	154	240	86
Unregulated Urban	StreetSweep (Acres) (Annual)	-		2	-	(2)
	UrbanNutMan (Acres) (Annual)	-	27	115	403	288
	Impervious Urban Surface Reduction (Acres)	-		-	-	-
	UrbStrmRest (linft)	-		-	4,970	4,970
	ExtDryPonds (Acres Treated)	1,022	444	-	499	499
	DryPonds (Acres Treated)	339	330	-	376	376
	WetPondWetland (Acres Treated)	629	6,110	9,136	6,384	(2,752)
	Infiltration (Acres Treated)	6	88	-	113	113

Source	Combined BMP Type	2005 Progress BMPs - Ches Bay Model	JCC Data-2005 BMPs	2009 Progress BMPs - Ches Bay Model	Total JCC BMPs to date	BMPs not Reported in Ches Bay Model
	Filter (Acres Treated)	23	1	-	3	3
	Urban Forest Buffers				2,809	2,809
	Forest Conservation				1,161	1,161
Regulated Urban	StreetSweep (Acres) (Annual)	-		2		(2)
	UrbanNutMan (Acres) (Annual)	-	30	164	406	242
	Impervious Urban Surface Reduction (Acres)	-		-	-	-
	ExtDryPonds (Acres Treated)	2,857	1,357	-	1,405	1,405
	DryPonds (Acres Treated)	917	1,221	-	1,383	1,383
	WetPondWetland (Acres Treated)	1,684	10,574	12,147	11,159	(988)
	Infiltration (Acres Treated)	21	162	-	164	164
	Filter (Acres Treated)	69	116	-	142	142
	Urban Forest Buffers				1,812	1,812
	Forest Conservation				1,317	1,317

It is readily apparent that there are substantial discrepancies presented in the above table with respect to urban and converting land uses. In particular:

- Both the 2005 and 2009 progress runs over estimated certain types of BMPs (generally dry and wet ponds) in both the regulated and unregulated portions of the County. At the same time, both progress runs greatly underestimated other BMPs as well as the variety and mix of BMPs present. Taken together the result is an inaccurate description of conditions in the County.
- Similarly, the model data underestimates the range and number of BMPs that are installed and functioning at this time.

Given that staff has invested substantial effort in collecting and verifying actual conditions in the County, we respectfully request that all of the BMPs that are currently implemented but not yet reported in the Bay model, be reported to EPA and included as part of the Bay model. This includes both the BMPs implemented prior to the 2005 baseline and those installed since. In that way, the actual BMPs can properly count toward meeting local CBTMDL goals.

If helpful to DCR and EPA, as this effort moves forward, James City County would welcome opportunities to provide future updates of BMP implementation data.

#### ***James City County Land Use and Land Cover Corrections***

Similar to the BMP implementation data, the land use/land cover data for James City County in the Bay model misrepresents the character of the County. Staff developed actual urban land uses based on a parcel-by-parcel analysis of aerial photography in the County's geographical information system. This data shows that urban uses cover almost 50 percent more land than included in the Bay model data. There is a corresponding reduction in the actual number of forested acres compared to the Bay data. These differences can result in a substantial difference in pollutant load. Table 2 details the discrepancies by land use category.

James City County respectfully requests that corrected land use/land cover data be provided to EPA and incorporated into the next watershed model run.

Table 2 - Chesapeake Bay Model Land Use Data Compared to James City County Data

<b>Pre-BMP Landuse Type (Categories from Chesapeake Bay Model)</b>	<b>Ches Bay Model Total Acres</b>	<b>County Estimate Total Acres</b>
<i>Agriculture</i>		
alfalfa	13	0
animal feeding operations (AFO)	19.8	0
concentrated AFOs	0	0
Degraded riparian pasture	83.4	0
hay with nutrients	100	0
hay without nutrients	399	58
hightill with manure	795	0
hightill without manure	218	200
lowtill with manure	0	3,200
nursery	2	0
nutrient management alfalfa	0	0
nutrient management hay w/nutrients	0	0
nutrient mgt hightill with manure	0	0
nutrient mgt hightill without manure	0	0
nutrient mgt lowtill with manure	0	0
nutrient management pasture	0	0
<i>Forest</i>		
Forest	64,321	54,027
Harvested forest	650	325
<i>Urban</i>		
CSS construction	0	0
CSS extractive	0	0
CSS impervious developed	0	0
CSS pervious developed	0	0
nonregulated extractive	361	180
nonregulated impervious developed	2,015	4,272
nonregulated pervious developed	7,075	14,593
regulated construction	623	250
regulated extractive	35	0
regulated impervious developed	2,054	2,756
regulated pervious developed	10,107	9,414

### ***Preferred BMP Scenarios for James City County***

Given the profound discrepancies in land use/land cover for James City County, staff was unable to develop preferred BMP scenarios at this time. This is due, in part, to the fact that when accurate BMP implementation data is entered into VAST with incorrect land cover data, it appears that James City County has met the Phase I WIP default load reductions. While we would like to think that this accurately represents our situation, we recognize that once the land cover data is corrected, James City County will likely have more work to do.

To that end, we request that DCR ask for and secure another watershed model run with corrected land use data from EPA prior to the beginning of the next MS4 general permit cycle. This will enable James City County to develop a technically sound implementation plan during Permit Year 1. Until we know differently about our load reductions, James City County will continue to implement the programs we currently have underway. It is not our intention to 'lose ground' during this period of uncertainty.

As participants in the HRPDC's regional effort to develop Phase II WIP scenarios, we have attached the *Chesapeake Bay Phase II Watershed Implementation Plan - Hampton Roads Regional Planning Framework, Scenario and Strategies* (HRPDC 2012) in Attachment A. In lieu of a James City County-specific preferred scenario, we ask that DCR utilize the regional scenario at this time to represent James City County in developing the Statewide Phase II WIP.

### ***James City County's Implementation Strategies***

Despite the uncertainty regarding any needed load reductions, staff has developed a wide-ranging list of strategies that are either consistent with the 2009 Comprehensive Plan, are supported by the County's current regulatory environment, or are included in current program activities. As such, these strategies should be considered as preliminary since they will be revisited and refined during development of an implementation plan during the next MS4 permit cycle. Even then, we would expect to continually evaluate and amend the strategies as we consider new information, cost estimates, available funding, or new technologies.

James City County's preliminary list of strategies is contained in Attachment B, presented in the format provided by DCR.

### ***Resource Needs for James City County's Implementation Efforts***

As previously described, the incomplete BMP implementation data and the inaccurate land cover data has James City County in an area of uncertainty relative to any expectations regarding load reductions. As a result, the County is unable to quantify with any certainty the needed resources to contribute towards the CBTMDL goals. Instead, staff has elected to provide a summary of what the County is currently contributing to implement the attached strategies. This information is included in Attachment B under the column heading, "Existing Funding Level." As with any effort, James City County's programs are dependent on adequate funding and adequate staffing. We believe our record to date is a favorable reflection on the County Board of Supervisors' long-standing commitment to environmental stewardship.

Given the seriousness of this undertaking, James City County respectfully requests that DCR provide James City County with a response to the issues raised in this letter. In particular, James City County is looking for assurance that both accurate baseline data and land use/land cover data will be included in the watershed model and that the results of a model run with corrected data would be available before the next MS4 general permit cycle begins.

Mr. David A. Johnson, Director  
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Finally, I would like to reiterate our appreciation and support for the collaborative, technically sound approach DCR has promoted with this effort. We look forward to working closely with you and your staff as this program moves forward.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Middaugh", written in a cursive style.

Robert C. Middaugh  
County Administrator

RCM/nb  
CBPhaseII.ltr

Enclosures